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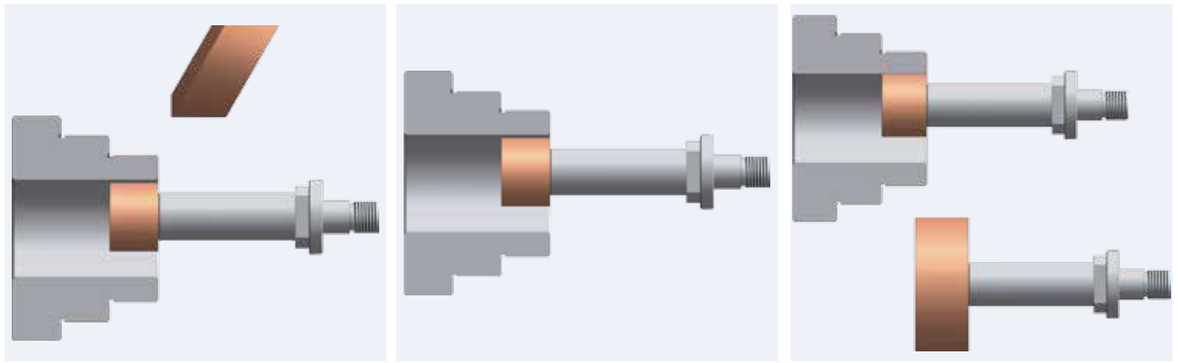
CNC Precision Hybrid

ID & OD Grinder



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EGM / EGI series CNC Precision Hybrid ID & OD Grinder

EGM350 CNC Hybrid precision grinder equips with X, Z, Y three axes slides and dual grinding spindles. It is specially designed to keep up with the growing demand for extremely high precision parts.

Features

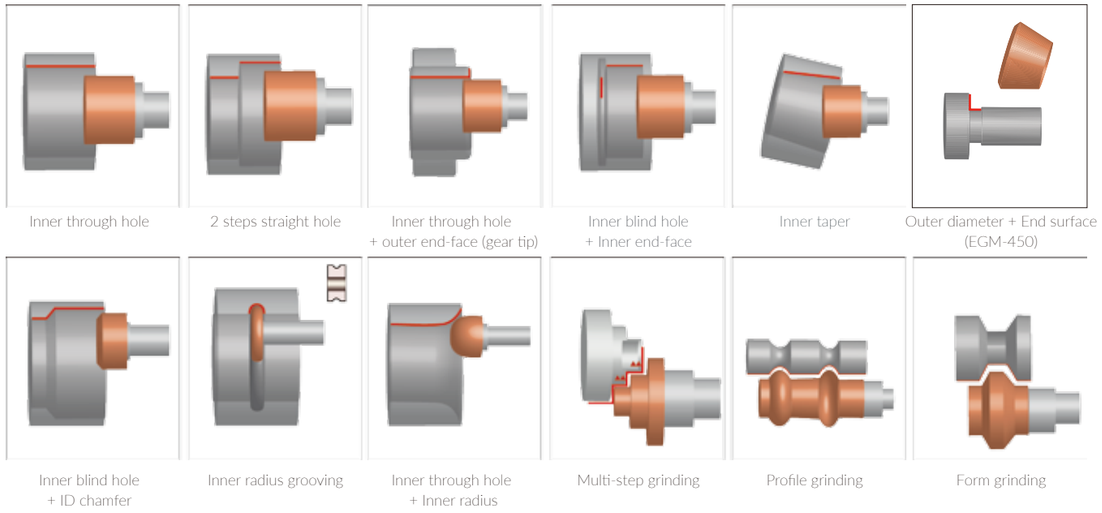
- EGM350 series CNC control systems are available for MITSUBISHI* or FANUC** control. It also can be operated with graphic conversational programming (Option) Therefore, it eliminates the need for G-code programing, and is easy to learn and use for grinding operation even for beginners.
  (*MITSUBISHI M80 with touch screen / **FANUC 0i-TF)
- Low-gravity base structure and operation panel are designed to meet ergonomic requirement
- Combinations of grinding operations for internal, external, end-face, groove, radius, internal & external step, and taper grinding can be executed in one chucking. Thus, it greatly increases grinding efficiency and also ensures better concentricity and accuracies of the ground parts.

EGM-350LCNC

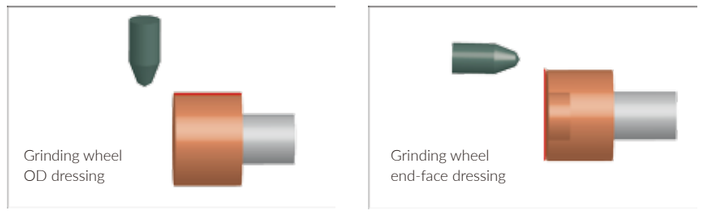
CNC Controller

- High speed Box type dressing function drastically reduces dressing time (Mitsubishi M80)
- Optional graphic conversational programming for grinding and wheel dressing (Mitsubishi/Fanuc)
- Dressing interrupt function during the grinding cycle can save time for the initial set-up.
- 10.4”color touch screen for Mitsubishi M80.
- Internal / External cylindrical compensation function.
- 0.001mm least increment input for X/Z/Y axes.
- Programs can be stored for future use.
- Current anti-collision function.
- MPG simulation function to test-run for the program to avoid accidental wheel crash.

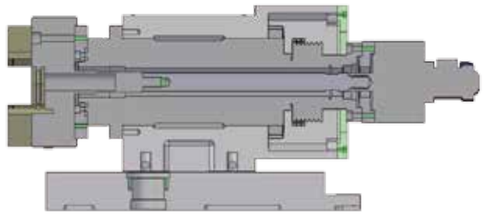
Standard grinding cycles and multi-steps graphic conversational functions.



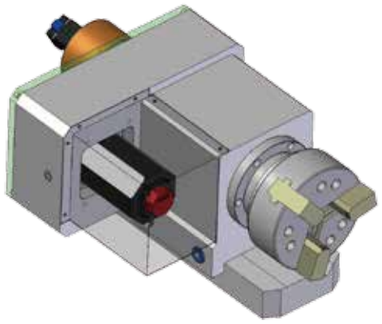
Grinding wheel dressing graphic illustration



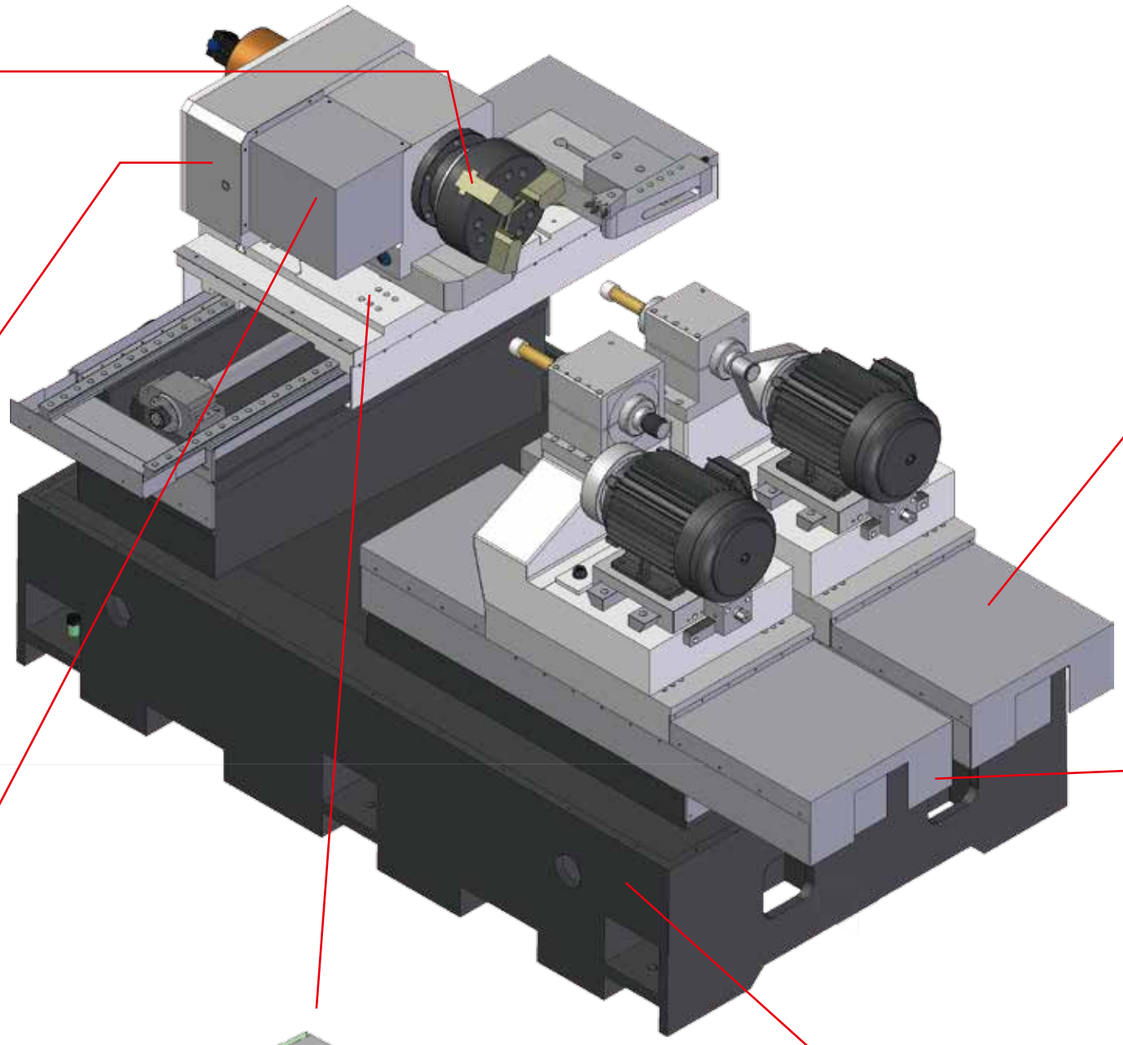
Complete one piece cartridge spindle can avoid the eccentricity of spindle housing and reduces the thermal growth, thus increase spindle life.

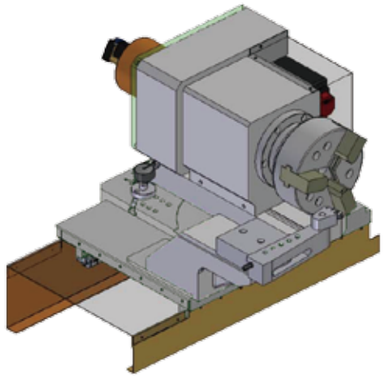


The spindle head design places the center of gravity at the rear portion to help balancing the whole spindle mechanism to increase spindle accuracy and loading capacity.

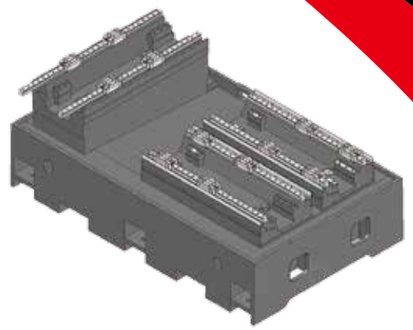


Spindle driven by servo motor offers optimum speed and torque performance.

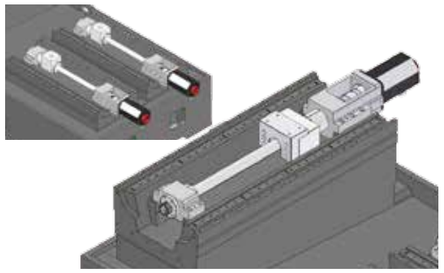




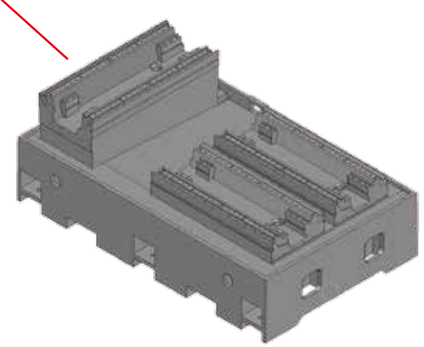
X axis lower slide design offers easy adjustment of the workhead for grinding parts with different lengths.



Machine incorporates roller type linear guide ways for X/Z/Y axes for high dynamic rigidity and better loading capacity. This drastically increases the grinding accuracy

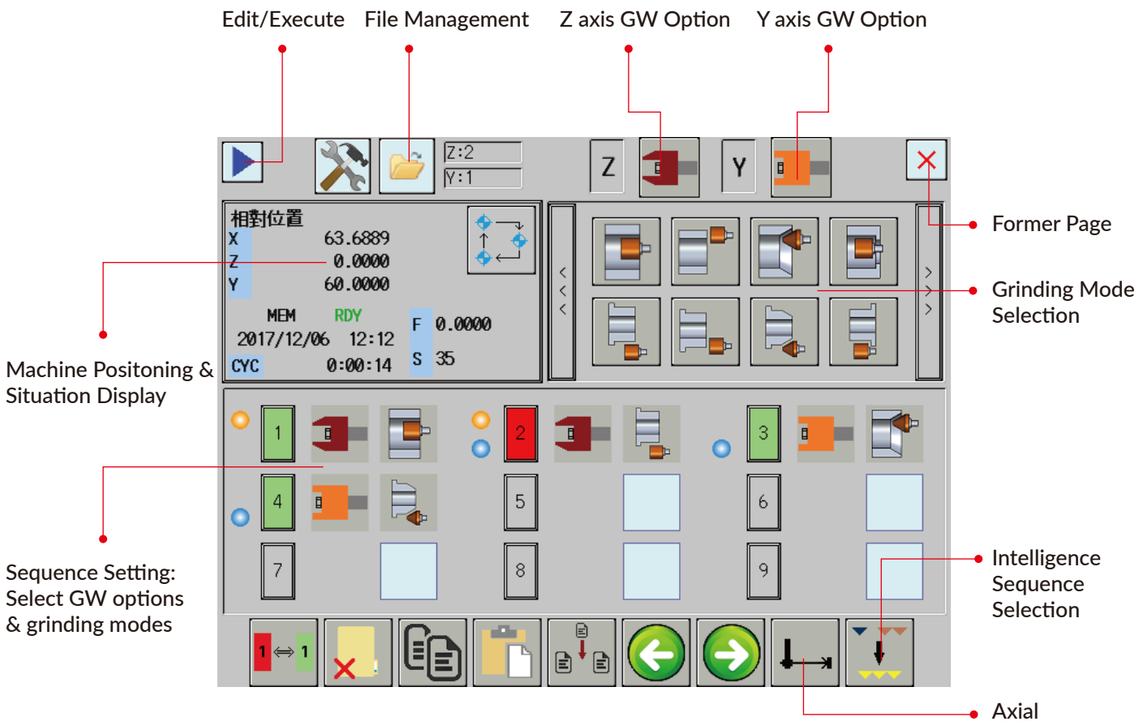


C1 grade precision ball screw with large leading pitch is used to achieve high accuracy.

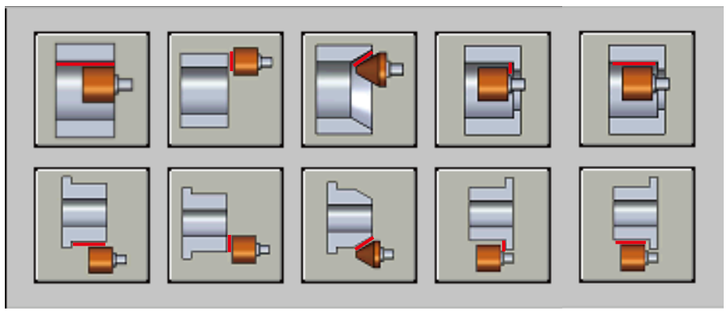


Low-gravity base structure, with slant bed design for better coolant draining and grinding swarf removal.

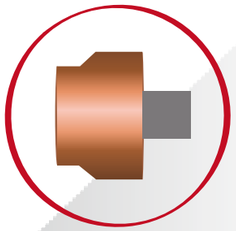
- **Operation set-up through simple graphic display icons for easy learning progress.**

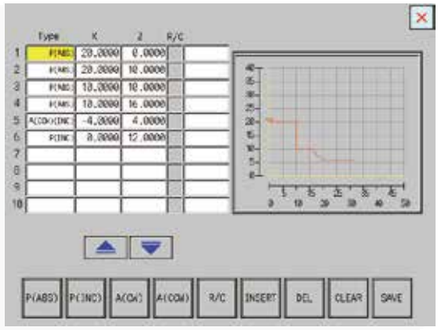


- **Grinding mode selection**



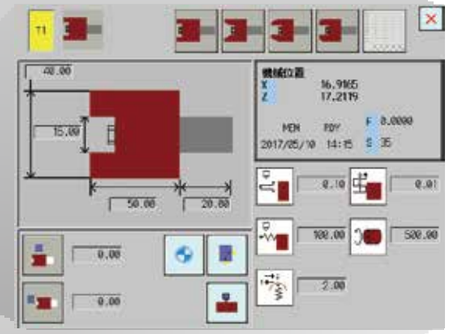
ID - Straight feed	ID- End-face	ID- Taper	ID- Reverse Grooving	ID- Retract After Grinding
OD- Straight feed	OD- End-face	OD- Taper	OD- Reverse Grooving	OD- Retract After Grinding



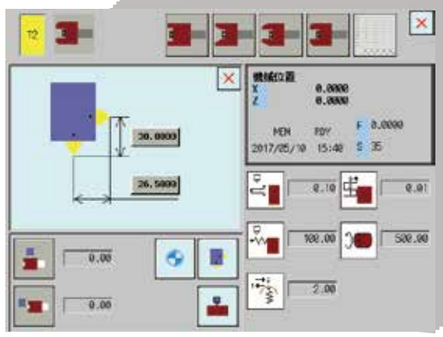


Grinding Wheel Dressing

With the iGrind high speed box type dressing function, the operator just have to input the necessary parameters for the dresser and the geometric data of the profile to create the optimal dressing path. Thus, it drastically reduces the wheel dressing time.



Sequence setting:
Select grinding wheel options and grinding modes



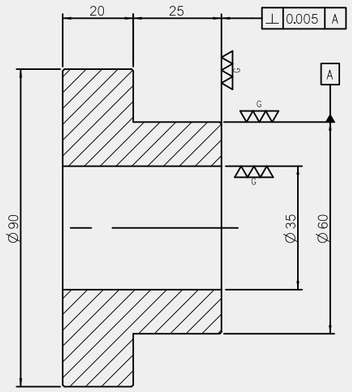
Convenient and quick wheel dressing point setting

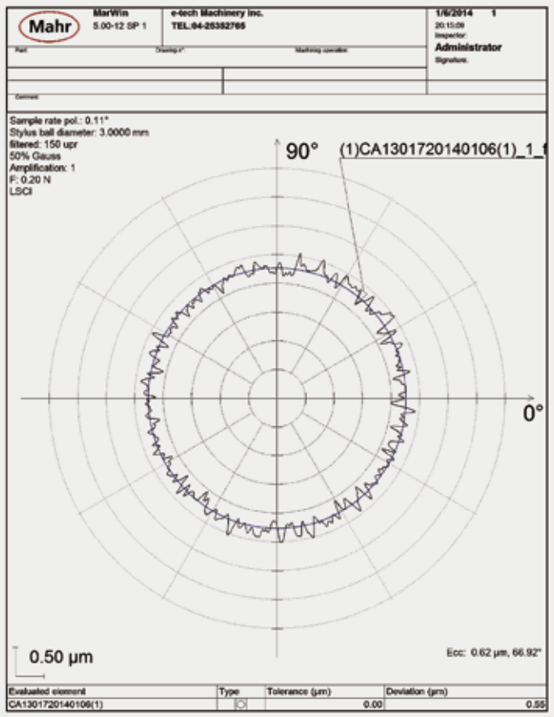
Grinding Example

ID auto. gauging device

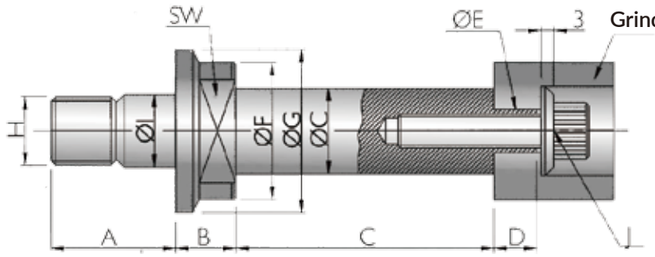
Parts Name:

Material ： SCM415(JIS)
Workpiece dimension ： φ90x45xφ35mm
Grinding application ： 0.25mm/60 sec.
Hardness ： HRC55°±2°
Dimension tolerance ： 5um
Grinding wheel speed ： 20,000 rpm
Roundness ： 2um
Cylindricity ： 3um





Grinding wheel spindle specification



Grinding Wheel

Suitable Inner Diameter	Grease Type	A	B	C	D	E	F	G	H	I	J	SW	Oil Mist Type	Suitable Inner Diameter
φ65~φ150	8,OOO rpm	42	16	φ 40x100 φ 40x85 φ 40x55	12	φ 12	φ 50	φ 58	M26x2P	φ 28	M8x1.25P	41	-	-
φ35~φ70	15,000 rpm	29	14	φ 30x90 φ 25x70 φ 20x50	10	φ 10	φ 32	φ 38	M16x1.5P	φ 17	M8x1.25P	24	-	-
φ24~φ40	20,000 rpm	28	11	φ 24x80 φ 20x60 φ 16x40	8	φ 8	φ 26	φ 32	M14x1.5P	φ 15	M6x1.0P	19	30,000 rpm	φ15~φ25
φ15~φ25	30,000 rpm	21	9	φ 16x40 φ 13x30 φ 10x25	6	φ 6	φ 21	φ 26	M10x1.5P	φ 10.5	M4x0.7P	17	40,000 rpm	φ12~φ16
φ12~φ16	40,000rpm	20	8	φ 12x35 φ 10x30 φ 8x25	x	x	φ 18	φ 23	M8x1.25P	φ 8.5	M4x0.7P	14	50,000 rpm	φ9~φ13
φ9~φ13	50,000rpm	18	7	φ 8x30 φ 7x25 φ 6x20	x	x	φ 15	φ 20	M7x1P	φ 7.5	M4x0.7P	11	60,000 rpm	φ6~φ10

Standard Accessories:

Control system: Mitsubishi M80 or FANUC 0i-TF with 10.4” screen
Three-direction dresser stand x 1 set, diamond dresser x 3 pcs
Wheel spindle surface detecting & crash control system (current indicator)
Grease type grinding wheel spindle: (Select 2 pc from 8,000~50,000RPM)
Hydraulic 8" 3-jaw chuck (w/ solid roary cylinder)
MPG handwheel: EGI 2 Axes, EGM 3 Axes control
X Axis Heidenhain linear scale (resolution 0.05 um)
Electricity cabinet w/ heat exchanger
Standard coolant tank 140L
Automatic lubrication system
4-color indication signal light
Levelling bolts and blocks
Tools & tool box
Electrical wiring diagram
Operation manual & part lists
Full-enclosed splash guard
Workhead spindle A2-5
Electrical lubricator
LED working light

Optional accessories:

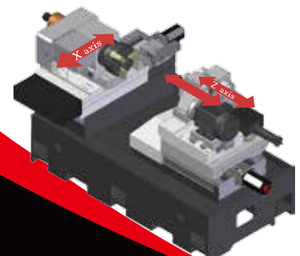
Mitsubishi controller (M80) dressing program: Radius / Taper / Multiple step / form shape
Mitsubishi controller (M80) iGrind program
Coolant system with magnetic separator & paper filter
Coolant system with magnetic separator
Coolant system with paper filter
CE standard electrical cabinet
Electrical cabinet air conditioner
Grease type grinding wheel spindle
Oil mist type grinding wheel spindle
Workhead spindle A2-6 (65mm thru-hole)
Manual strong type 7" 3-jaw chuck
Oil & mist collecting system
Spindle oil mist lubrication system
ID auto. gauging device
Diamond roller dressing device
Dressing sensor system
Soft-Jaw turning assembly
B axis linear scale w/ digital readout
Safety door lock

Diamond roller dressing device

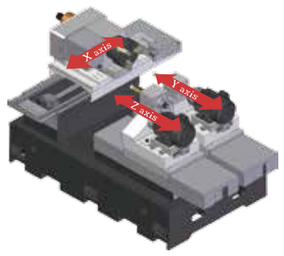
Specification : EGM & EGI Series

Model			EGI-150 CNC	EGM-350 CNC
General	Max. grinding ID	mm	φ300	φ400
Capacity	Max. grinding OD	mm	φ300	φ400
	Swing over workhead	mm	φ500	φ500
	Max. grinding depth	mm	260	260
	Max. weight of workpiece	kg	50	50
	Max. length of workpiece	mm	300	300
	Type of workhead		Single feeding wheelhead	Dual indenpendent wheelhead
Workhead	3-Jaw chuck		Hydraculic - 8"/10"(opt.)	Hydraculic - 8"/10"(opt.)
(X Axis)	Swiveling angle range	deg	+15°~ -5°	+15°~ -5°
	Manual travel distance (toward Z axis)	mm	250	250
	Spindle speed	rpm	0~1000 (Variable speed)	0~1000 (Variable speed)
	Servo motor rated power	kw	1.8(F)/2.2(M)	1.8(F)/2.2(M)
Grinding wheelhead	OD grinding wheel size	mm	N/A	N/A
(Y Axis)	ID grinding wheel size	mm	N/A	φ100
	Max. spindle speed	rpm	N/A	10,000 (std.)
	Spindle motor/ max. torque	Kw/Nm	N/A	3.75Kw / 13Nm
Grinding wheelhead	OD grinding wheel size	mm	N/A	φ100
(Z Axis)	ID grinding wheel size	mm	φ100	N/A
	End-Surface grinding spindle (Opt.Z2)	mm	φ80(CBN)	N/A
	Max. spindle speed	rpm	20,000 (std.)	20,000 (std.)
	Spindle motor/ max. torque	Kw/Nm	3.75Kw / 13Nm	3.75Kw / 13Nm
X Axis	Travel	mm	300	420
	Rapid feedrate	m/min	8	8
	Heidenhain linear scale resolution	um	0.05	0.05
	Min. increment	mm	0.0001	0.0001
	Servo motor rated power	Kw	1.8(F)/2.2(M)	1.8(F)/2.2(M)
Y Axis	Travel	mm	N/A	350
	Rapid feedrate	m/min	N/A	8
	Min. increment	mm	N/A	0.0001
	Servo motor rated power	Kw	N/A	1.8(F)/2.2(M)
Z Axis	Travel	mm	350	350
	Rapid feedrate	m/min	8	8
	Min. increment	mm	0.0001	0.0001
	Servo motor rated power	kw	1.8(F)/2.2(M)	1.8(F)/2.2(M)
Motor	Hydraulic motor	Kw	0.75	0.75
	Coolant pump	Kw	0.37+0.18	0.37+0.18
Machine	Net weight	kg	5000	5800
	Gross weight	kg	5500	6300
	Packing size (L x W x H)	mm	3350x2250x1950	3350x2250x1950

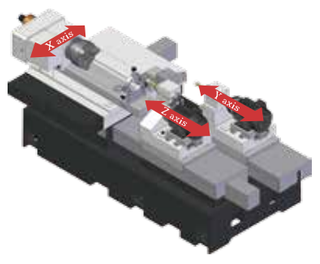
Model			EGM-350L CNC	EGM-450 CNC
General	Max. grinding ID	mm	φ300	φ400
Capacity	Max. grinding OD	mm	φ330	φ400
	Swing over workhead	mm	φ340	φ410
	Max. grinding depth	mm	260	260
	Max. weight of workpiece	kg	300 (w/ steady rest)	50
	Max. length of workpiece	mm	750	300
	Type of workhead		Dual indenpendent wheelhead	Dual indenpendent wheelhead
Workhead	3-Jaw chuck		Manual- 8"/10"(opt.)	Hydraculic - 8"/10"(opt.)
(X Axis)	Swiveling angle range	deg	+15°~ -5°	+15°~ -5°
	Manual travel distance (toward Z axis)	mm	550	250
	Spindle speed	rpm	0~1000 (Variable speed)	0~1000 (Variable speed)
	Servo motor rated power	kw	1.8(F)/2.2(M)	1.8(F)/2.2(M)
Grinding wheelhead	OD grinding wheel size	mm	N/A	φ405x50xφ127
(Y Axis)	ID grinding wheel size	mm	φ100	N/A
	Max. spindle speed	rpm	10,000 (std.)	1300 (std.)
	Spindle motor/ max. torque	Kw/Nm	3.75Kw / 13Nm	3.75Kw / 26Nm
Grinding wheelhead	OD grinding wheel size	mm	φ100	N/A
(Z Axis)	ID grinding wheel size	mm	N/A	φ100
	End-Surface grinding spindle (Opt.Z2)	mm	N/A	N/A
	Max. spindle speed	rpm	20,000 (std.)	20,000 (std.)
	Spindle motor/ max. torque	Kw/Nm	3.75Kw / 13Nm	3.75Kw / 13Nm
X Axis	Travel	mm	420	450
	Rapid feedrate	m/min	8	8
	Heidenhain linear scale resolution	um	0.05	0.05
	Min. increment	mm	0.0001	0.0001
	Servo motor rated power	Kw	2.5(F)/3.0 (M)	1.8(F)/2.2(M)
Y Axis	Travel	mm	350	350
	Rapid feedrate	m/min	8	8
	Min. increment	mm	0.0001	0.0001
	Servo motor rated power	kw	1.8(F)/2.2(M)	1.8(F)/2.2(M)
Z Axis	Travel	mm	350	350
	Rapid feedrate	m/min	8	8
	Min. increment	mm	0.0001	0.0001
	Servo motor rated power	kw	1.8(F)/2.2(M)	1.8(F)/2.2(M)
Motor	Hydraulic motor	Kw	0.75	0.75
	Coolant pump	Kw	0.37+0.18	0.37+0.18
Machine	Net weight	kg	6800	6300
	Gross weight	kg	7300	6800
	Packing size (L x W x H)	mm	4000X2250X1950	3350x2250x1950



EGI-150CNC



EGM-350CNC



EGM-350LCNC

EGM-450CNC